chamber should be kept between 10 and 35 TORR, hence, contradicting the conclusion of the Examiner that the Wennerstrum pump may go below 10 TORR. Consequently, the Applicant respectfully disagrees with the Examiner that Wennerstrum teaches that the vacuum in the chamber may below 10 TORR.

Claim Rejections 103

Examiner rejected Claims 27-28 and 30-31 under 103(a) as being unpatentable over Wennerstrum in view of Dhaemers, U. S. Patent #5,546,678. The Examiner first reasons that Dhaemers teaches a drying apparatus and method with an infrared light (73) for heating the chamber (41) (Figure 6, column 6, lines 3-6), and a humidistat (112) for measuring humidity in the chamber. Including it: "Would have been obvious to one having ordinary skill in the art to substitute the microwave generator (12) of Wennerstrum with an infrared light as taught by Dhaemers."

First, Wennerstrum does not teach or suggest a need for a vacuum less than 10 TORR as was argued above and as is incorporated by reference herein. Consequently, adding Dhaemers to Wennerstrum does nothing to remedy the essential deficiencies of Wennerstrum.

It is noted the Examiner did not address the consequences of the Examiner's earlier imposed restriction requirement, which stated that the Applicant disclosed at least two distinct embodiments, which would separately be patentable. As separately patentable, prior art for one may not be prior art for the other. In the unelected species of the Applicant's invention, air is heated to a preset temperature and allowed to enter the sealed chamber (Application page 6, lines 9-15). By the Examiner's own reasoning, heating air, which then enters the chamber, is patentably distinct from directly heating the chamber using electromagnetic energy. The Dhaemers references discloses heating air, which is directed by a fan (74) into the heating chamber (41). Consequently, the Examiner has admitted on the record by imposing a restriction requirement that heating air to enter a chamber is a nonobvious variant of heating the chamber directly, otherwise, the restriction requirement earlier imposed by the Examiner is inappropriate and Applicant respectfully requests it be withdrawn. Applicant raised this issue in response to the Examiner's first Office Action.

However, the Examiner did not address this contention of the Applicant in the Examiner's final Office Action. Clarification is respectfully requested.

Here the distinction between heating air to enter a chamber and heating the chamber directly is not simply a matter of choice or convenience. Because the drying in the Applicant's invention takes place at a vacuum below 10 TORR, heated air cannot be continuously fed into the chamber without affecting the vacuum level. Consequently, heating air, to then enter the chamber, creates problems when the vacuum is continuously maintained in the chamber, as is in the case of the elected species of the Applicant's invention. These problems are solved by the Applicant's use of direct infrared energy to heat the chamber. Wennerstrum does use microwave energy to directly heat the chamber. However, microwave energy creates "hot spots", as is disclosed in the Wennerstrum reference. Wennerstrum solves these "hot spots" by agitating the porous sample. This is not practical to heat a construction sample where the structural integrity of the sample must remain unaffected. The Dhaemers reference is simply a dryer of a standard type where air is heated then allowed to enter a chamber to dry something within the chamber. In that regard, Dhaemers is no different from a standard clothes dryer at a Laundromat. There is no suggestion in Dhaemers as to why infrared energy is important to heat a construction sample in a sealed vacuum chamber or that would suggest the use of infrared energy to directly heat a sealed vacuum chamber, since in Dhaemers the infrared energy is used to heat air, which then enters the chamber. Consequently, there is no teaching in Dhaemers or in Wennerstrum that would suggest combining the Dhaemers process of heating air with the Wennerstrum use of microwave ovens to to directly heat a sealed vacuum chamber to solve the problems solved by this nvention. Dhaemers and Wennerstrum function differently and accomplish different goals from this invention and combining them is not suggested by either piece of prior art without using the teaching of this Applicant's invention. Moreover, even if Dhaemers is combined with Wennerstrum, it still does not teach the use of infrared energy to directly heat a sealed chamber as opposed to the actual Dhaemers teaching of heating air to enter an unsealed chamber. Consequently, the Applicant respectfully traverses the combination of the Examiner. Consequently, Claims 27-28 and Claims 30-31 are allowable as written and the Applicant respectfully requested the Examiner withdraw rejections to these claims.

Claims 29 and 33-34 are rejected under a combination of Wennerstrum in view of Dhaemers and further in view of Hunter, U. S. Patent #6,085,443. The Examiner adds Hunter for the purpose of teaching the concept of using a load cell. However, adding Hunter does nothing to overcome the deficiencies of Wennerstrum , which fails to disclose a vacuum greater than 10 TORR, and the combination of Dhaemers with Wennerstrum, which fails to disclose the use of infrared energy to directly heat a sealed vacuum chamber. Applicant incorporates by reference herein arguments made above and will not repeat them here.

Claim 32 was rejected under 35 U.S.C. as being unpatentable over Wennerstrum in view of Dhaemers and further in view of Davis, U. S. Patent #6,410,889. Davis was used to add a heating pad. However, adding a heating pad does nothing to overcome the deficiencies of Wennerstrum and Dhaemers as previously argued and those arguments are incorporated by reference herein and will not be repeated here.

Claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum in view of Sanyo. Previously the Examiner had used the Wennerstrum patent claiming that Wennerstrum teaches a vacuum drying method where the pressure is less than 10 TORR. Applicant has traversed that conclusion of the Examiner. Evidently to remedy the apparent deficiencies of Wennerstrum, the Examiner now adds Sanyo, U. S. Patent 4,107,049. The Examiner states that: "Sanyo et al. teach a method for drying porous material with a step of vacuuming the sealable chamber (5) under a pressure of .01 to 10 TORR", concluding it would have been obvious to combine the drying method of Wennerstrum to include the step of drying the porous material within the sealable chamber under a pressure of less than 10 TORR as taught by Sanyo. The Applicant traverses the conclusion of the Examiner that Sanyo teaches a method for drying a porous material in a vacuum chamber under a pressure of .01 to 10 TORR. Sanyo does not teach a method of drying porous materials in the patent. It is a process for producing semi-permeable membranes. In Sanyo, a porous membrane is prepared before being placed in to a vacuum vessel. The membrane is prepared by a well-known method (Sanyo, column 5, lines 66-68). This "wet membrane" is dried overnight at room temperature (Sanyo, column 6, lines 13-14). Only when the

membrane is dry is it placed in a vacuum vessel at a vacuum of .2 TORR. Insofar as Sanyo teaches any drying at all, it is using a conventional method of drying at room temperature with exposure to air. The membrane itself is not dried in the vacuum chamber, but rather is exposed to plasma in the vacuum chamber for 10 minutes. The Applicant respectfully requests the Examiner to show where Sanyo teaches "a method for drying porous materials" at all, much less teaches a method for drying porous materials including "the step of vacuuming the sealable chamber (5) under a pressure of .01 to 10 TORR." The Sanyo patent does teach that a vacuum between .01 to 10 TORR is useful for applying a plasma coating to a semi-permeable membrane. However, that has no application to the Applicant's invention and is not prior art for the Applicant's invention.

Claims 3-5 and 7-8 were rejected as being unpatentable over Wennerstrum in view of Sanyo and further in view of Dhaemers.

The Applicant traverses the conclusion of the Examiner that Sanyo teaches a method of drying porous materials in a sealed vacuum chamber under a pressure of .01 to 10 TORR and incorporates by reference herein the arguments advanced above. The Examiner reasons that Dhaemers teaches a method using infrared light for heating the chamber (41). The Applicant has previously traversed this conclusion of the Examiner, explaining in detail how Dhaemers does not teach a direct heating of a sealed vacuum chamber by an infrared light, but rather teaches heating air to enter an unsealed chamber. Applicant will not repeat those arguments here, but incorporate them by reference herein.

Claims 6 and 9 were rejected under the combination of Wennerstrum, Sanyo, Dhaemers, with the addition of Hunter. Applicant has previously shown that the Wennerstrum patent does not disclose the use of a vacuum chamber with a vacuum greater than 10 TORR for drying porous materials; Sanyo does not disclose a vacuum chamber for drying porous materials at all; and Dhaemers does not disclose the use of infrared light to directly heat a vacuum chamber. Consequently, the Applicant will not repeat those arguments here, but incorporates them by reference herein. Adding the Hunter reference does nothing to remedy the essential deficiencies of any combination of Dhaemers, Wennerstrum, and Sanyo.

Claims 10 and 21 were rejected under the combination of Wennerstrum , Sanyo, Dhaemers, and with the addition of Davis. Applicant has previously shown the combination of Wennerstrum, Dhaemers, and Sanyo is inappropriate and does not disclose what the Examiner states they disclose. The Applicant will incorporate those arguments by reference herein and will not repeat them. Adding the Davis reference does nothing to remedy the essential deficiencies of any combination of Dhaemers, Wennerstrum, and Sanyo.

Claims 1 and 23 were rejected under a different combination of Sanyo in view of Wennerstrum. Here, the Examiner reasons that Sanyo shows an apparatus and method for drying a porous sample. Applicant traverses this conclusion of the Examiner. Sanyo does not disclose a method for drying a porous sample, by rather a method or process of producing semi-permeable membranes. But for the teaching of the need of a method of drying a porous sample taught by the Applicant, there was no reason in the Sanyo reference to consider it as teaching drying a porous sample. The Examiner uses the teaching of the Applicant for a need for a means of heating the interior of a chamber to take the Sanyo neon transformer (2) and electrodes (3, 4) to call them a "heating means". The Sanyo electrodes (3, 4) and transformer (2) are not a "heating means" but means for creating a plasma in a chamber. But for the teaching of this Applicant, there would be no reason to even consider calling the Sanyo's plasma generator, using a transformer (2) and electrodes (3, 4), a heating means. Applicant respectfully requests the Examiner to provide a column and line reference in Sanyo where electrodes (3, 4) and transformer (2) are discussed as a means for providing heat to the enclosed vacuum chamber. Consequently, the Examiner uses the Applicant's teaching to turn the Sanyo method for creating a semi-permeable membrane into a method for drying a porous sample, turns the Sanyo transformer and electrodes into a heating means, and then having transformed the Sanyo into something it is not, claims that combining the Sanyo reference with Wennerstrum renders the Applicant's invention obvious. Applicant respectfully traverses this conclusion of the Examiner.

Claims 3-5, 7-8, and 27-28, 30-31 were rejected under a combination of Sanyo, Wennerstrum, and Dhaemers. The Applicant repeats and incorporates by reference the arguments